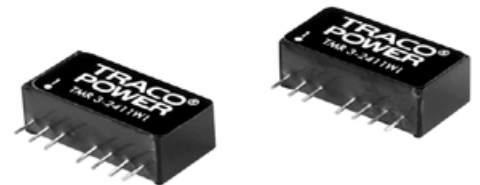


Features

- ◆ Highest power density in SIP package
- ◆ Ultra wide 4:1 input range
- ◆ Small footprint: 21.8 x 9.2 mm
- ◆ Temperature range -40° to $+85^{\circ}\text{C}$
- ◆ High efficiency
- ◆ Excellent load and line regulation
- ◆ Short-circuit protection
- ◆ I/O-isolation 1500 VDC
- ◆ Remote On/Off control
- ◆ 3 Year product warranty



The TMR-3WI series is a new family of isolated 3W DC/DC converters with regulated output, featuring ultra-wide 4:1 input voltage range. The product comes in an ultra-compact SIP plastic package with a small footprint occupying only 2.0 cm² (0.3 square in.) of board space. An excellent efficiency allows -40° to $+85^{\circ}\text{C}$ operation temperatures.

Further features include remote On/Off control and continuous short circuit protection. The very compact dimensions of these converters make them an ideal solution for many space critical applications in battery-powered equipment and instrumentation.

Models

| Order code | Input voltage | Output voltage | Output current max. | Efficiency typ. |
|--------------|---------------------------------|----------------|---------------------|-----------------|
| TMR 3-2410WI | 9 – 36 VDC (24 VDC nominal) | 3.3 VDC | 700 mA | 75 % |
| TMR 3-2411WI | | 5 VDC | 600 mA | 80 % |
| TMR 3-2412WI | | 12 VDC | 250 mA | 79 % |
| TMR 3-2413WI | | 15 VDC | 200 mA | 79 % |
| TMR 3-2421WI | | ± 5 VDC | ± 300 mA | 78 % |
| TMR 3-2422WI | | ± 12 VDC | ± 125 mA | 80 % |
| TMR 3-2423WI | | ± 15 VDC | ± 100 mA | 82 % |
| TMR 3-4810WI | 18 – 75 VDC (48 VDC nominal) | 3.3 VDC | 700 mA | 74 % |
| TMR 3-4811WI | | 5 VDC | 600 mA | 78 % |
| TMR 3-4812WI | | 12 VDC | 250 mA | 78 % |
| TMR 3-4813WI | | 15 VDC | 200 mA | 79 % |
| TMR 3-4821WI | | ± 5 VDC | ± 300 mA | 78 % |
| TMR 3-4822WI | | ± 12 VDC | ± 125 mA | 79 % |
| TMR 3-4823WI | | ± 15 VDC | ± 100 mA | 80 % |

Input Specifications

| | |
|--------------------------------|--|
| Input current at full load | 24 Vin models: 170 mA max. 48 Vin models: 85 mA max. |
| Input current at no load | 24 Vin models: 25 mA typ. 48 Vin models: 15 mA typ. |
| Surge voltage (100 msec. max.) | 24 Vin models: 50 V max. 48 Vin models: 100 V max. |
| Input filter | EN 55022 level A, FCC part 15, level A with external capacitor |

Output Specifications

| | |
|--|--|
| Voltage set accuracy | ±1 % max |
| Regulation | <ul style="list-style-type: none"> – Input variation Vin min. to Vin max. 0.2 % max. – Load variation 0 – 100% single output models: 1.0 % max. – Load variation 0 – 100% dual output models: 1.0 % max. balanced load – Load cross regulation 25/100% 5.0 % max. (dual output models) |
| Minimum load | not required |
| Temperature coefficient | 0.1 %/K |
| Ripple and noise (20 MHz Bandwidth) | 30 mVpk-pk max. |
| Start up time (constant resistive load) | <ul style="list-style-type: none"> – Power On 30 ms typ. – Remote On 30 ms typ. |
| Transient response setting time (25% load step change) | 500 µs typ. |
| Temperature coefficient | ± 0.1 %/°C |
| Short circuit protection | continuous, automatic recovery |
| Capacitive load | <ul style="list-style-type: none"> 3.3 VDC output models: 1'760 µF max. 5 VDC output models: 1'000 µF max. 12 VDC output models: 170 µF max. 15 VDC output models: 110 µF max. ±5 VDC output models: ± 470 µF max. ±12 VDC output models: ± 100 µF max. ±15 VDC output models: ± 47 µF max. |

General Specifications

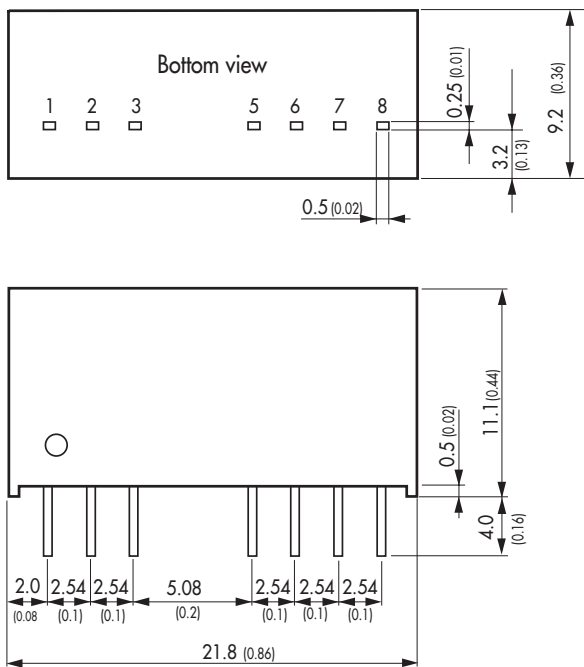
| | |
|--|--|
| Temperature ranges | <ul style="list-style-type: none"> – Operating –40 °C to +85 °C – Case temperature +100 °C max. – Storage –55 °C to +125 °C |
| Load derating | 3.5 %/K above 70°C |
| Humidity (non condensing) | 95 % rel. H max. |
| Reliability, calculated MTBF (MIL-HDBK-217F ground benign) | >1.7 Mio h @ 25°C |
| Isolation voltage (60 sec) | – Input/Output 1'500 VDC |
| Isolation capacity | – Input/Output 200 pF max. |
| Isolation resistance | – Input/Output (500 VDC) >1 GOhm |
| Switching frequency | 100 kHz (PWM) |
| Remote On/Off | <ul style="list-style-type: none"> – On: open or high impedance – Off: 2...4 mA to applied via 1 KOhm resistor – Off stand by input current 2.5 mA max. |
| Vibration and thermal shock | MIL-STD-810E |
| Safety standards | UL /cUL 60950-1, EN 60950-1, IEC 60950-1 |
| Safety approvals | – UL/cUL pending |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Physical Specifications

| | |
|------------------|-------------------------|
| Case material | non-conductive plastic |
| Potting material | silicon, UL 94V-0 rated |
| Weight | 4.8g (0.17oz) |

Outline Dimensions



| Pin-Out | | |
|---------|---------------|---------------|
| Pin | Single | Dual |
| 1 | -Vin (GND) | -Vin (GND) |
| 2 | +Vin (Vcc) | +Vin (Vcc) |
| 3 | Remote On/Off | Remote On/Off |
| 5 | No con. | No con. |
| 6 | +Vout | +Vout |
| 7 | -Vout | Common |
| 8 | No con. | -Vout |

Dimensions in [mm], () = Inch
 Pin dimension tolerances 0.1 (0.004)
 Pin pitch tolerances: ±0.25 (0.01)
 Tolerances: ±0.5 (0.02)

Specifications can be changed any time without notice.